

# Motivational Experiences Of Student-Athletes In Gamified Vocabulary Learning Through Wayground: A Qualitative Study Based On Keller's Arcs Model

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## ABSTRACT

This qualitative case study explored Form 1 student-athletes' motivational experiences in vocabulary learning through Wayground based on Keller's ARCS model (Attention, Relevance, Confidence, and Satisfaction). The study also identified aspects of Wayground-based vocabulary learning that supported or hindered their motivation in a Malaysian sports school. Twenty Form 1 student-athletes participated in four Wayground-based vocabulary sessions, and six students were purposively selected for two focus group discussions. Data were collected through observation field notes, exit tickets, and focus group discussions and analysed using a predominantly deductive thematic analysis guided by Keller's ARCS model. The findings indicated that students generally perceived Wayground as a motivating digital learning platform. Features such as competition, immediate feedback, visuals, creative activities, contextualised vocabulary tasks, and peer collaboration supported students' attention, relevance, confidence, and satisfaction. However, some students also reported challenges, including repetitive activity formats, time limits, difficult task types, and technical issues, which reduced their sustained engagement and confidence. The findings highlight the importance of designing learner-centred, varied, and contextually relevant gamified vocabulary-learning activities that meet the learning needs of student-athletes. The study provides practical implications for ESL educators to integrate gamified platforms to support students' motivation in vocabulary learning. It also offers context-specific insight into how the motivational value of gamified features may vary across ARCS dimensions within the student-athlete learning context.

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## 1. Introduction

Vocabulary knowledge is crucial in English as a second language (ESL) learning because it supports learners' comprehension and communication in reading, writing, listening, and speaking. In Malaysian ESL classrooms, gamified tools are increasingly used to make vocabulary learning more engaging, especially for learners who may have limited time or competing commitments. Wayground, formerly known as Quizizz, offers game-like elements such as points, timers, leaderboards, and immediate feedback that may influence learners' motivation during vocabulary activities. In sports school contexts, student-athletes manage demanding training schedules in addition to academic learning, which may shape how they experience and respond to technology-enhanced lessons.

The Malaysian government's ongoing effort to elevate English proficiency is reflected in policies such as MBMMBI and the adoption of the Common European Framework of Reference (CEFR) (Ministry of Education Malaysia, 2017). The KSSM English curriculum, aligned with the CEFR, expects Form 1 students to master approximately 2,000 words and achieve the A2 proficiency level. However, this goal remains challenging, as many students have weak vocabulary mastery, vocabulary knowledge below the 2,000-word level, and a tendency to forget meanings over time, resulting in low confidence and reduced motivation to communicate or engage with the language (Wong et al., 2019). A recent literature review by Shamsudin et al. (2025) supports this issue, showing that pre-CEFR classroom instruction from 2011 to 2016 focused mainly on rote learning, contextual guessing, and limited technology use. In contrast, post-CEFR studies from 2017 onwards show that digital tools and gamification have become increasingly common in ESL vocabulary classrooms to enhance learner engagement and attention.

Vocabulary learning challenges may be more pronounced in sports school contexts, where student-athletes often balance academic study, intensive training schedules, fatigue, and dual-career demands that may reduce attention and engagement in classroom learning (Isa et al., 2018; Stambulova & Wylleman, 2019; Jiang & Wang, 2025). Thus, this study explores Wayground as a gamified digital platform that may support learner motivation through features such as immediate feedback, timers, and leaderboards, guided by Keller's ARCS model (Attention, Relevance, Confidence, and Satisfaction). However, less is known about how student-athletes experience the motivational effects of such gamified tools in sports school contexts. Therefore, this study is situated at MY Sports School, Penang, where Form 1 student-athletes balance academic learning with intensive training schedules, and where time constraints and fatigue may influence students' vocabulary learning experiences.

Gamified platforms have been increasingly studied in ESL learning, but limited attention has been given to understanding how specific gamification affordances shape learners' motivational processes. Notably, little is known about how learners' experience features such as competition, immediate feedback, time limits, activity variety, and peer interaction through different motivational dimensions. This limitation is particularly relevant to student-athletes, whose academic learning takes place alongside intensive training schedules and other sporting commitments (Stambulova & Wylleman, 2019; Jiang & Wang, 2025; Judan et al., 2022). Moreover, their dual-career demands may shape how they perceive and respond to technology-enhanced learning activities.

Although digital and gamified learning tools such as Wayground are becoming more common in Malaysian secondary classrooms to enhance learner engagement, most previous studies have focused on general student populations and have relied heavily on quantitative methods that measure learning outcomes rather than learners' motivational experiences and how learners perceive and experience specific digital learning affordances across the four main ARCS dimensions. In addition, limited research has examined how student-athletes in sports school contexts experience vocabulary learning through gamified platforms, particularly through Keller's ARCS model. A qualitative approach is needed to examine how learners interpret and experience specific gamification features within their particular learning context.

Therefore, this study explores how Form 1 student-athletes perceive their motivational experiences while learning vocabulary through Wayground and identifies aspects of Wayground-based vocabulary learning they perceive as supporting or hindering their motivation. Such understanding is important for educators to design more contextually relevant and motivating vocabulary instruction that better supports the learning needs of student-athletes. In doing so, this study addresses a contextual gap concerning sports-school learners, a theoretical gap concerning how specific gamified affordances operate across the ARCS dimensions within the student-athlete context, and a methodological gap

arising from the limited qualitative exploration of motivational experiences in gamified vocabulary learning. Guided by Keller's ARCS model, the study examines how students experience gamified vocabulary learning across the dimensions of Attention, Relevance, Confidence, and Satisfaction.

The study was guided by the following research questions:

1. How do Form 1 student-athletes perceive their motivational experiences (Attention, Relevance, Confidence, and Satisfaction) while learning vocabulary through Wayground?
2. What aspects of Wayground-based vocabulary learning do Form 1 student-athletes perceive as supporting or hindering their motivation?

## **2. Literature Review**

### ***2.1 Vocabulary Learning and How Vocabulary Is Learned***

Vocabulary knowledge is essential for ESL learners to support reading, writing, listening and speaking. Many Malaysian secondary learners continue to demonstrate limited vocabulary knowledge and experience difficulties retaining and using vocabulary effectively (Wong et al., 2019). These challenges may be more pronounced among student-athletes, who frequently balance academic learning with intensive training schedules that can reduce concentration and engagement (Judan et al., 2022). Therefore, effective and motivating vocabulary instruction remains important in sports school contexts.

Vocabulary acquisition requires repeated exposure, retrieval practice, and meaningful use of words to promote long-term retention (Nation, 2001). Mobile-Assisted Language Learning (MALL) enables learners to access language learning materials through mobile devices and provides multimedia input, immediate feedback, and flexible learning opportunities (Su & Cheng, 2015; Mayer, 2009). Meta-analytic evidence indicates that MALL generally produces better vocabulary learning outcomes than traditional instruction, particularly when activities incorporate retrieval practice and meaningful interaction (Zhou & Zhou, 2026).

Previous studies have reported positive effects of Wayground, formerly known as Quizizz, on vocabulary learning, motivation, and learner engagement. Students generally perceive Wayground as enjoyable and useful, while features such as immediate feedback, interactive quizzes, and gamified competition have been associated with improved vocabulary outcomes and classroom participation (Aulia et al., 2025; Basuki & Hidayati, 2019). These findings show that gamification may enhance learner motivation by incorporating elements such as points, competition, badges, and feedback. These features can capture learners' attention, strengthen confidence, increase perceived relevance, and promote satisfaction, making gamification conceptually consistent with Keller's ARCS model (Zhang & Hasim, 2023; Pham et al., 2025).

### ***2.2 Gamified Mobile Learning and Wayground***

Gamification is the use of game-design elements, such as points, badges, leaderboards, and challenges in non-game educational contexts (Deterding et al., 2011). Gamification has been widely used to enhance learner motivation and engagement in language learning. Research suggests that gamified activities can improve learners' attitudes, emotional responses, and participation in vocabulary learning tasks (Hamari et al., 2014; Zhang & Hasim, 2023). Systematic reviews indicate that gamification generally produces positive outcomes in language learning, including improved language skills, engagement, and learner attitudes, although results may vary according to implementation and context (Hamari et al., 2014; Zhang & Hasim, 2023). In Malaysia, post-CEFR vocabulary instruction has increasingly incorporated technology-based and gamified approaches (Shamsudin et al., 2025).

The motivational benefits of gamification align closely with Keller's ARCS model. Interactive elements such as points, competition, and immediate feedback can capture learners' Attention. Meaningful learning activities may increase Relevance, visible progress and feedback can strengthen Confidence, while rewards and achievement may promote

Satisfaction (Keller, 1987; Pham et al., 2025). Therefore, ARCS provides a useful framework for understanding learners’ motivational experiences in gamified vocabulary learning environments.

Wayground is a gamified learning platform that incorporates features such as points, leaderboards, timers, and immediate feedback. Previous studies have reported positive effects of Wayground on vocabulary learning, learner engagement, and motivation (Aulia et al., 2025). Its gamified features may support motivational dimensions of the ARCS Model, particularly Attention, Confidence, and Satisfaction, making it a suitable platform for exploring student-athletes’ motivational experiences during vocabulary learning.

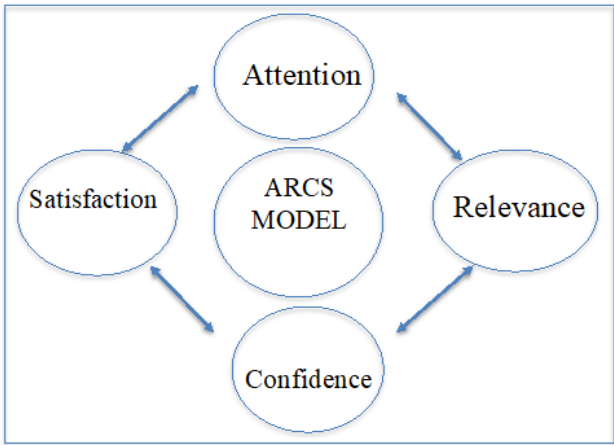
**2.3 Sports School Context**

Student-athletes in sports schools must balance academic learning with intensive training and competition schedules. These dual-career demands may result in limited study time, fatigue, and reduced concentration during learning activities (Judan et al., 2022; Abdullah et al., 2023). Motivation has been identified as an important factor influencing English learning among sports school students (Isa et al., 2018). Therefore, understanding how gamified learning supports motivation among student-athletes remains important.

**2.4 Keller's ARCS Model**

Keller’s ARCS model consists of Attention, Relevance, Confidence, and Satisfaction (Figure 1). It is a widely used framework to explain how instructional design can support learner motivation (Keller, 1987). Attention refers to capturing learners’ interest, Relevance concerns the perceived value and meaningfulness of learning activities, Confidence relates to learners’ beliefs in their ability to succeed, and Satisfaction refers to positive feelings resulting from learning experiences.

The model has been widely applied in technology-enhanced and gamified learning environments to examine learners’ motivational experiences (Zhang & Hasim, 2023). In the present study, ARCS serves as the theoretical framework for exploring Form 1 student-athletes’ motivational experiences while learning vocabulary through Wayground.



**Figure 1.** Overview of Keller's ARCS Model (1987)

**2.5 Research Gap**

Previous studies have demonstrated that gamified platforms such as Wayground can enhance learner engagement and motivation, while Keller’s (1987) ARCS model has been widely used to examine motivational design in technology-enhanced learning environments. However, existing research on sports school learners has primarily focused on academic performance, achievement motivation, dual-career challenges, and burnout (Abdullah et al., 2023; Jiang & Wang, 2025; Judan et al., 2022; Stambulova & Wylleman, 2019). Although Isa et al. (2018) examined English learning motivation among

Malaysian sports school students, the study employed a quantitative approach and did not investigate learners' experiences with specific technology-enhanced interventions.

Furthermore, limited research has explored how secondary school student-athletes experience vocabulary learning through Wayground. Research examining such experiences through Keller's ARCS model, particularly the dimensions of Attention, Relevance, Confidence, and Satisfaction, remains scarce in the Malaysian sports school context. More specifically, limited attention has been given to how learners experience specific gamified affordances, such as competition, immediate feedback, time limits, activity variety, and peer interaction, across different motivational dimensions. In addition, previous studies have largely focused on learning outcomes among general student populations, with less attention given to learners' lived motivational experiences. This leaves a theoretical gap in understanding how the motivational value of particular gamified affordances may vary according to the motivational dimension being experienced and the learning context in which the affordances are used.

Therefore, this study explores Form 1 student-athletes' ARCS-based motivational experiences of learning vocabulary through Wayground and identifies aspects of Wayground-based vocabulary learning that support or hinder their motivation.

### **3. Methodology**

#### ***3.1 Research Design***

This study used a qualitative single-case study. This research design was considered suitable because it allowed an exploration of Form 1 students' perspectives and behaviours in a real-life context (Yin, 2014). The case in this study was one Form 1 class in a Malaysian sports school that participated in Wayground-based vocabulary learning activities over four weeks.

#### ***3.2 Participants and Setting***

The study was conducted at MY Sports School, Penang. The name of the school was replaced with a pseudonym to protect confidentiality. The participants consisted of 20 Form 1 student-athletes from one class who participated in the Wayground-based vocabulary learning sessions. The participants comprised 12 male and 8 female students. The school provides several sports programmes, including sepak takraw (n=7), football (n=2), hockey (n=4), athletics (n=4), and netball (n=3). Students were selected mainly based on their exit ticket responses and classroom observations, with the aim of capturing varied motivational experiences, including positive, mixed, and less positive responses to the Wayground activities. Classroom observations indicated differences in students' levels of engagement. Some students participated actively while others appeared less motivated or found certain activities less interesting. Similarly, students' exit ticket responses reflected varied perceptions of the activities. As most students demonstrated broadly similar levels of English proficiency, the selection focused primarily on variation in motivational responses rather than proficiency differences.

Six students were purposively selected for the FGDs based on variation in their motivational responses recorded across the four Exit Tickets. The selection aimed to include students who demonstrated more consistently positive as well as less positive or mixed responses across the ARCS dimensions, together with differences in their reported challenges and motivational experiences. This approach allowed the FGDs to capture a range of perspectives rather than focusing only on students who responded positively to the Wayground activities. Selection was based on motivational variation rather than English proficiency, as the participants had broadly similar levels of English proficiency.

#### ***3.3 Data Collection***

Data were collected over four weeks during regular English lessons. The Wayground vocabulary activities were conducted once a week, with each session lasting approximately 20 to 30 minutes. The vocabulary used in the activities was based on the Form 1 KSSM English curriculum and the "People and Culture" theme.

The four Wayground sessions were designed progressively, beginning with visual recognition and matching tasks, followed by spelling and contextual vocabulary tasks, categorising activities, and finally creative production tasks. Each session followed a similar structure: a short set induction, a Wayground-based vocabulary activity, and a short debrief or reflection.

Three data collection methods were used, which are researcher observation field notes, exit tickets, and focus group discussions. The researcher's observation field notes were used to record students' classroom behaviours, responses, interactions, and motivational reactions during the Wayground sessions. Exit tickets were completed by students after each session to capture their immediate reflections on the activities. Two semi-structured focus group discussions were conducted after the four Wayground sessions to obtain deeper explanations of students' motivational experiences.

The observation notes, exit ticket prompts, and focus group protocol were developed based on Keller's ARCS model and adapted from Keller's Course Interest Survey (CIS) and Instructional Materials Motivation Survey (IMMS) (Keller, 2010). The questions were rewritten into age-appropriate and open-ended prompts suitable for Form 1 students.

Data sufficiency was considered during the focus group discussions. The six participants were purposively selected to represent varied motivational responses identified through the exit tickets and classroom observations. Across the two focus groups, recurring patterns were evident and no substantially new perspectives relevant to the research questions emerged. The adequacy of the data was further supported through triangulation with the exit tickets and classroom observation field notes.

### **3.4 Data Analysis**

A thematic analysis, which was predominantly deductive, was conducted using Keller's ARCS model as the guiding framework. Data were initially examined and organised according to the four motivational dimensions of Attention, Relevance, Confidence, and Satisfaction. In addition, inductive coding was used to identify supporting and hindering aspects of Wayground-based vocabulary learning that emerged from the participants' responses. Data from the observation field notes, exit tickets, and focus group discussions were analysed following Braun and Clarke's (2006, 2021) thematic analysis procedures. The focus group discussions were audio-recorded with permission and transcribed verbatim.

The analysis involved several stages. First, the researcher familiarised herself with the data by repeatedly reading the transcripts, exit tickets, and observation field notes. Initial codes were then generated across the three data sources. Deductive codes were organised according to the four ARCS dimensions, while additional codes reflecting supporting and hindering motivational factors were identified inductively. Related codes were subsequently compared and grouped into broader themes, which were reviewed against the original data and refined before being organised according to the two research questions.

The researcher conducted the coding iteratively, repeatedly reviewing coded extracts and emerging interpretations against the original data. Interpretations were also compared across the focus group discussions, exit tickets, and observation field notes to ensure that they remained grounded in the data. Researcher reflexivity was employed throughout the analytical process to consider how the researcher's involvement in the study might influence interpretation.

### **3.5 Trustworthiness and Ethics**

Trustworthiness was enhanced through methodological triangulation, member checking, and expert validation. Findings were compared across researcher observation notes, exit tickets, and focus group data, and selected participants reviewed summaries of the emerging themes to verify accuracy (Lincoln & Guba, 1985). The three instruments were reviewed by the Head of English Panel and a senior teacher with more than 30 years of teaching experience at MY Sports School to ensure that they were well aligned with the ARCS framework and appropriate in terms of students' age and vocabulary level.

Ethical considerations were observed throughout the study. Permission to conduct the study was obtained from the school authority. Written consent was obtained from parents and students before data collection. Students were informed that their participation was voluntary and that they could withdraw from the study at any time without penalty. The school's name and students' identities were kept confidential, and the students' marks were not affected by their participation in the study.

Researcher reflexivity was considered throughout the study, as the researcher's perspectives and involvement in the research process could influence data interpretation (Olmos-Vega et al., 2023). The researcher designed the Wayground-based vocabulary activities and observed the classroom sessions while the teacher conducted the activities with the students. The researcher was aware that involvement in designing the Wayground-based activities could create a potential expectation regarding their motivational value. To minimise this potential influence, the researcher focused observations on students' observable responses and interactions rather than assuming that particular Wayground features were inherently motivating. During data analysis, interpretations were repeatedly checked against the original observation field notes, exit tickets, and focus group responses to ensure that the emerging themes remained grounded in the data.

## **4. Findings**

This section presents the findings based on the two research questions. The findings for RQ1 are organised according to Keller's ARCS model, namely Attention, Relevance, Confidence, and Satisfaction. The findings for RQ2 are presented according to aspects of Wayground-based vocabulary learning that supported and hindered students' motivation. The focus group participants were labelled as FGD1-P1 to FGD1-P3 and FGD2-P1 to FGD2-P3. Exit ticket responses were labelled as ET-S1 to ET-S20, while field notes were labelled as FN-W1 to FN-W4.

### **4.1 RQ1: Motivational Experiences Based on ARCS**

#### **4.1.1. Attention**

The findings showed that Wayground helped to attract students' attention during vocabulary learning. Students were interested in the activities because the platform included gamified features such as points, competition, rewards, boosters, visuals, and interactive tasks. One participant commented, "Using Wayground is definitely way more fun and interesting compared to traditional classroom learning style" (FGD1-P2). Another participant also stated, "The point systems and boosters in the app is [sic] such an amazing way to keep things fun and interesting" (FGD1-P1), further illustrating that students enjoyed the game-like features in Wayground.

The researcher's field notes also showed that students responded positively to the visual elements in the activities. For example, students commented, "The pictures so [sic] cute" (FN-W3), while another student said, "Look at this cute kitty on my screen!" (FN-W3). These comments show that pictures and visual elements helped make the activity more interesting for students.

However, some students also felt that repeated layouts and strict time limits reduced their attention. One student commented, "The page is kinda boring and lack [sic] designs" (ET-S5). This shows that although Wayground could attract students' attention, students still needed more variety in the activities to stay interested.

#### **4.1.2. Relevance**

The findings showed that students found the vocabulary activities more meaningful when the words were related to their daily lives, hobbies, and familiar experiences. Familiar content helped students connect the new vocabulary to their own experiences. One student shared, "I love caving, my dad would bring us to Ipoh and discover different caves" (FN-W2). This shows that students could relate the vocabulary item to something they had experienced before.

Students also connected the vocabulary to familiar places and school activities. For example, one student stated, "We all go Batu Feringghi and picnic" (ET-S7), while another student shared, "Pak Syed bring [sic] pasukan KRS to jungle" (FGD1-

P2). These responses show that students were able to see the connection between the vocabulary learned and their own lives.

Overall, the findings suggest that relevance was supported when vocabulary activities were connected to students' personal experiences, hobbies, co-curricular activities, and outdoor activities. This helped students see the usefulness of the vocabulary they learned.

#### **4.1.3. Confidence**

The findings showed that students became more confident as they became more familiar with Wayground and the activity format. Some students felt more confident because the platform allowed them to practise vocabulary, receive feedback, and check their answers. One student stated, "I can know the correct pronunciation, listen and follow to repeat" (ET-S11). Pronunciation support therefore appeared to help students learn the words better.

Peer support also helped students feel more confident. One student explained, "I don't know the answers of the hot text activity, luckily I discussed it with my friends" (ET-S9). Another student commented, "Got it right because we worked together!" (FN-W2). These responses show that students could complete difficult tasks more confidently when they discussed the answers with their friends.

However, the timer made some students feel stressed. One student stated, "The time limit makes me stressed" (ET-S14), while another student said, "Timer made me nervous" (FGD2-P2). Therefore, time limits did not always support confidence. For some students, the timer made them feel pressured when answering vocabulary questions.

#### **4.1.4. Satisfaction**

The findings showed that students felt satisfied when they achieved good scores, completed the activities successfully, and saw their progress. Several students expressed happiness when they performed well in the activities. One student stated, "Happy as I won the game" (ET-S4), while another student wrote, "I get the highest point" (ET-S8). One participant also explained, "It feels amazing... it means I've learned a lot" (FGD1-P3). These responses show that students felt satisfied when they could see their scores, achievement, and progress.

Students also enjoyed creative activities in Wayground. One student shared, "I love the drawing part, very fun, and different a bit" (FN-W4). Another student stated, "The drawing part is good, I can use my creativity to draw the activity I like to do" (ET-S12). This shows that satisfaction did not only come from scores and rankings, but also from creative activities.

The field notes also showed that students enjoyed finishing the tasks and competing with their friends. One student stated, "I finished first!" (FN-W1). This shows that achievement, creativity, and peer interaction helped students feel satisfied during Wayground vocabulary learning.

### **4.2 RQ2: Supporting and Hindering Factors**

#### **4.2.1. Aspects Supporting Motivation**

The findings showed that several aspects of Wayground supported students' motivation. These included interactive and competitive features, rewards, visuals, creative activities, peer collaboration, and vocabulary that was related to students' experiences. Students seemed more motivated when the activities were fun, visual, and interactive.

Several students mentioned that points, boosters, and competition motivated them. One participant stated, "The point systems and boosters in the app is [sic] such an amazing way to keep things fun and interesting" (FGD1-P1). Another participant said that the motivating part was "Probably the point system and being able to compete with others" (FGD1-P2). This shows that students enjoyed the competitive features in Wayground.

Visual elements also supported students' motivation. The field notes recorded students' positive responses to pictures and game-like elements. Students commented, "The pictures so [sic] cute" (FN-W3), while another student said, "Look at this cute kitty on my screen!" (FN-W3). These comments show that pictures and visual design helped make the vocabulary activities more enjoyable.

Creative activities also helped motivate students. One student shared, "I love the drawing part, very fun, and different a bit" (FN-W4). Another student stated, "The drawing part is good, I can use my creativity to draw the activity I like to do" (ET-S12). These responses show that students enjoyed activities that allowed them to express their ideas.

Peer collaboration was also useful. One student stated, "Got it right because we worked together!" (FN-W2). This shows that students felt more motivated and confident when they could work with their friends.

Students also felt more interested when the vocabulary was connected to familiar experiences. One student stated, "We all go Batu Feringghi and picnic" (ET-S7), while another shared, "Pak Syed bring [sic] pasukan KRS to jungle" (FGD1-P2). These responses show that contextualised vocabulary helped students relate learning to their own lives.

#### **4.2.2. Aspects Hindering Motivation**

The findings also showed that some aspects of Wayground hindered students' motivation. These included repetitive design, time limits, difficult task formats, and technical issues. These aspects affected students' attention, confidence, and engagement during some activities.

Some students felt that the layout and activities became repetitive. One student commented, "The page is kinda boring and lack designs and also only including point giving system is also boring" (ET-S5). This shows that students wanted more design variation and not only the point system.

Students also suggested that more features and mini games could be included. One student suggested, "Improve the page design and add mini games alongside the point giving system to make it more fun and interesting" (ET-S5). Another student stated, "Can try other Wayground features" (ET-S12). These comments show that students wanted more variety to stay motivated.

Time limits were also a problem for some students. One participant stated, "Timer made me nervous" (FGD2-P2). Another student commented, "The time limit makes me stressed" (ET-S14). This shows that although timers can make the activity exciting, they can also make some students feel pressured.

Some students also found certain task formats difficult. One student stated, "Build sentence exercise is hard, some I don't know how to do" (ET-S16). Another student commented, "Maybe remove the part where we need to arrange the spelling of the words because to some it might feel confusing and unnecessary" (ET-S9). These responses show that some activities were confusing or difficult for students, especially when they needed to spell, arrange words, or build sentences.

Technical issues also affected students' motivation. One student reported, "Weak WiFi, very slow" (ET-S3). Field notes also recorded that unstable internet connection disrupted the activities and reduced students' engagement for a while (FN-W1). This shows that technical problems can interrupt the learning process and affect students' motivation.

## **5. Discussion and Conclusion**

### **5.1. Wayground and Students' ARCS-Based Motivational Experiences**

Most importantly, the findings extend existing applications of the ARCS model by showing that the motivational value of gamified affordances is not uniform and consistent across all types of learners. Rather than functioning as motivating features, specific affordances can also support or hinder motivation depending on how they were designed and experienced within the specific learning context. For example, while competition and time limits could increase excitement

and attention for some students, time pressure also caused nervousness and stress for others, which negatively affected confidence. Similarly, repeated use of similar activity formats reduced attention despite the presence of gamified elements. These results indicate that task difficulty, time constraints, various types of activity, contextual relevance, and peer interaction influence ARCS-based motivational experiences in gamified learning. Thus, this study expands the use of ARCS in gamified vocabulary learning among student-athletes by demonstrating how the same digital affordance may enhance one motivating dimension while hindering another.

The findings also highlight the importance of the student-athlete context in understanding motivational experiences with gamified learning. Participants responded positively to competition and peer collaboration, which may be particularly meaningful within a sporting environment where teamwork and competition are familiar aspects of students' experiences. At the same time, students' academic learning takes place alongside intensive training and other sporting commitments, making task difficulty, time pressure, and activity pacing important considerations in their learning experiences (Stambulova & Wylleman, 2019; Judan et al., 2022; Jiang & Wang, 2025). Thus, the findings suggest that gamified learning among student-athletes should be understood within the intersection of academic and sporting experiences, rather than solely in terms of the digital features of the platform.

### ***5.2. Supporting and Hindering Factors in Wayground-Based Vocabulary Learning***

The findings also highlight the importance of considering the specific learning context of student-athletes when interpreting the motivational value of gamified learning. While previous research has generally reported positive motivational and engagement outcomes from gamification, the present findings suggest that these effects may be shaped by students' sporting experiences and dual academic-sport responsibilities (Stambulova & Wylleman, 2019; Judan et al., 2022; Jiang & Wang, 2025). Student-athletes in this study responded positively to competition and peer collaboration, experiences that were consistent with the teamwork and competitive elements of their sporting environment. At the same time, the demands associated with balancing academic learning and sporting commitments make task pacing and cognitive demands particularly relevant to their classroom experiences. Thus, the motivational value of gamification appears to depend not only on the digital features provided, but also on how those features fit the learners' broader educational and sporting context.

The findings revealed several aspects of Wayground-based vocabulary learning that supported students' motivation. These included interactive and competitive elements, rewards, visuals, creative activities, peer collaboration, and contextualised vocabulary. Points, leaderboards, boosters, and competition made the activities more enjoyable and encouraged students to participate. This is consistent with previous studies which reported that gamification can improve students' engagement, motivation, and participation in language learning (Hamari et al., 2014; Zhang & Hasim, 2023). Competition therefore appeared to have a dual motivational role. On one hand, competing with peers contributed to students' attention and satisfaction by creating a sense of challenge and achievement. On the other hand, when competition was combined with strict time limits, the same game-oriented environment could create pressure for some students. This suggests that competition should not be treated as an inherently positive motivational feature; its value may depend on whether the competitive conditions remain supportive rather than overly pressuring for learners.

Creative and collaborative activities also supported students' motivation. Students enjoyed activities such as drawing, discussion, and teamwork because these activities allowed them to express their ideas and learn with their friends. This is useful in the sports school context because student-athletes are familiar with teamwork and competition. When vocabulary learning included teamwork and familiar content, students seemed more willing to participate.

The findings also showed that contextualised vocabulary helped students connect the lesson to their own experiences. Vocabulary activities became more meaningful when they were related to hobbies, outdoor activities, school events, and daily routines. The relevance findings further suggest that contextualisation may be particularly important for student-athletes because vocabulary learning can be connected to experiences that are already meaningful within their academic, sporting, and everyday lives. Rather than relying solely on gamified features to attract attention, integrating familiar experiences may strengthen the perceived value of the learning content itself. This distinction is important within the ARCS framework because motivation may be supported not only by how vocabulary is presented, but also by whether learners perceive the content as meaningful to their own experiences. This suggests that student-athletes may benefit from vocabulary tasks that are connected to their actual learning and life contexts.

However, the findings also showed that some aspects hindered students' motivation. Repetitive layouts and similar activity formats reduced students' interest over time. This suggests that novelty and variation are important in gamified vocabulary learning. If teachers use the same activity design too often, students may become less interested even though the platform is gamified. The negative responses to repetitive activity formats also qualify the assumption that gamification itself is sufficient to sustain motivation. Although the platform contained game-like elements, students became less interested when similar formats were repeatedly used. This suggests that motivational value may arise from the interaction between gamified elements and instructional variety rather than from the presence of gamification alone. In this sense, the findings extend previous discussions of gamification by highlighting activity variety as an important condition for sustaining Attention within an ARCS-based learning environment.

Time limits also affected students' confidence and motivation. Some students felt nervous or stressed when they had to answer quickly. This suggests that teachers need to consider students' proficiency levels and task difficulty before setting time limits. Timers may be suitable for simple recognition tasks, but students may need more time for difficult activities such as spelling, sentence building, or hot text activities. The findings concerning time limits provide a particularly important qualification of the motivational potential of gamification. Timers are commonly incorporated into gamified activities to create challenge and urgency (Deterding et al., 2011).

However, participants in this study did not experience time pressure uniformly. For some students, the competitive pace contributed to excitement, whereas others experienced nervousness and stress, which affected their confidence. This suggests that the motivational effect of a gamified feature may vary according to the cognitive demands of the task and the learner's ability to respond within the available time. For student-athletes, whose classroom learning occurs alongside demanding sporting schedules, such contextual and task-related conditions require specific consideration when designing time-sensitive, gamified activities to ensure they achieve the learning objectives of the lesson before their attention is drained.

Difficult task formats and technical issues also affected students' motivation. Some students found sentence-building and spelling tasks confusing, while a slow internet connection disrupted the learning activity. These findings suggest that teachers should provide clear instructions, enough support, and backup plans when using digital tools in class.

### ***5.3 Implications of the Study***

The findings provide several implications for ESL teachers, especially those teaching student-athletes or learners with busy schedules. First, teachers can use gamified platforms such as Wayground to support vocabulary learning, but the activities should be connected to lesson objectives and vocabulary-learning goals. Gamified tools should not be used only for fun. They should help students practise, remember, and use vocabulary meaningfully.

Second, teachers should include familiar and relevant vocabulary contexts. For student-athletes, vocabulary activities can be connected to sports, training, competitions, teamwork, school activities, hobbies, and daily routines. This can help students see the relevance of English vocabulary learning.

Third, teachers should provide variation in activity design. If the same layout or question type is repeated too often, students may lose interest. Teachers can use different Wayground features, such as matching, fill-in-the-blanks, drawing, word cloud, sentence building, and discussion tasks to maintain students' attention.

Fourth, teachers should be careful when using timers and difficult tasks. Some students may feel stressed when they are required to answer too quickly. Therefore, teachers should adjust time limits according to students' proficiency level and the difficulty of the task. Peer collaboration can also be included to help students complete more challenging vocabulary activities.

### ***5.4. Limitations and Recommendations for Future Research***

This study has several limitations. First, it was conducted in only one sports school and involved a small group of Form 1 student-athletes. Therefore, the findings cannot be generalised to all Malaysian students or all sports schools. Second, the

intervention lasted only four weeks, so the study could not determine whether students' motivation would be sustained over a longer period. Third, the study focused on students' motivational experiences and did not measure vocabulary achievement before and after the intervention.

Future research can involve more sports schools from different states to compare students' motivational experiences in different learning contexts. Future studies can also use a longer intervention period to examine whether students' motivation remains stable after the novelty of the platform decreases. In addition, future research may include vocabulary tests or mixed method designs to examine both students' motivation and vocabulary learning outcomes.

### **5.5. Conclusion**

This study explored Form 1 student-athletes' motivational experiences in vocabulary learning through Wayground based on Keller's ARCS model. The findings showed that Wayground was generally perceived as a motivating platform for vocabulary learning. Students' attention was supported by gamified and visual features, relevance was supported by familiar and contextualised vocabulary, confidence was supported by feedback, pronunciation support, and peer collaboration, while satisfaction was supported by scores, achievement, creativity, and social interaction.

At the same time, the study found that students' motivation could be hindered by repetitive layouts, strict time limits, difficult task formats, and technical issues. These findings show that gamified vocabulary learning should be designed carefully. Teachers should not rely only on game elements, but should also consider activity variety, suitable pacing, vocabulary relevance, and students' learning needs.

Overall, the study suggests that Wayground can support student-athletes' motivation in vocabulary learning when the activities are well-planned, varied, and contextually relevant. The study contributes to ESL vocabulary learning by providing qualitative insights into how student-athletes experience motivation through a gamified learning platform in a Malaysian sports school context. Beyond demonstrating the applicability of Keller's ARCS Model, the study highlights that the motivational value of gamified affordances is conditional on task design, activity variety, time pressure, contextual relevance, and peer interaction. In particular, the same gamified feature may support or hinder different motivational experiences depending on how it is designed and experienced within the learner's academic and sporting context.

### **Declarations**

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#### **Competing Interests**

The authors declare that they have no competing interests.

#### **Ethical Approval**

Permission to conduct the study was obtained from the school authority. Written consent was obtained from the parents and participating students prior to data collection. Participation was voluntary, and participants were informed of their right to withdraw from the study at any time without penalty. The confidentiality and anonymity of the school and participants were maintained throughout the study.

#### **Author Contributions**

The first author conceptualised the study, conducted the data collection and analysis, prepared the initial draft of the manuscript, and contributed to subsequent revisions. The co-author supervised the study and contributed to the revision of the manuscript. All authors read and approved the final manuscript.

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## APPENDIX A: FOCUS GROUP DISCUSSION (FGD) PROTOCOL

*Questions are adapted from IMMS and CIS (Keller, 2010) and converted into open-ended prompts to suit qualitative focus group discussion and gamified Wayground tasks.*

**Focus:** Exploring Motivational Experiences in Wayground-Based Vocabulary Learning

**Participants:** 3 Form 1 Student-Athletes per group.

**Duration:** 20-30 minutes

### 1. Icebreaker (3 mins):

- How did you feel about using Wayground in class for the last month compared to our usual English lessons?

### 2. ARCS-Based Questions (Motivational Experience - RQ1) (12 mins):

- **Attention (The Hook):**
  - What parts of Wayground caught your attention most during the month? (It can be game features, question types, pictures, competition, or something else.) Why?
  - Did your attention change by Week 4 when the questions got harder (sentences)? Did you still feel excited?
  - What reduced your motivation or made you stressed/annoyed during Wayground? Why?
- **Relevance (Value):**
  - The words we learned were about hobbies and activities (like surfing, camping). Did you feel these words were useful for you as a student-athlete or in your daily life? Why?
  - Did using Wayground make you feel that learning English vocabulary is important?
  - Can you give an example of where you might use these words in your life (training, hostel, friends, social media, writing)?
- **Confidence (Success):**
  - In Week 2 and 3, we did spelling. How did you feel when you saw the 'Correct' or 'Incorrect' screen immediately? Did it help you learn?
  - Did the immediate feedback help you feel more confident that you could answer correctly next time?
  - Did the timer/fast pace make you feel more confident, or less confident? Why?
- **Satisfaction (Reward):**
  - How did you feel when you saw your name on the leaderboard?
  - Besides leaderboard, what else made you feel satisfied? (e.g., getting better, learning new words, finishing on time, teacher praise, helping friends.)
  - Did you want to play again after the session ended? Why?

### 3. Aspects of Wayground that support or hinder motivation - RQ2 (10 mins):

- What made you feel more motivated during the activities?
- What made you feel less motivated during the activities?
- Were there any parts of the activities that distracted or discouraged you?
- Which parts of the activities helped you enjoy vocabulary learning more?
- What aspects of Wayground made learning easier or harder for you?

### 4. Closing (30 sec): Anything else you want to share that I didn't ask?

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